

Final Notes December 10, 1997

IMPLEMENTATION TEAM CONFERENCE CALL

December 4, 1997
National Marine Fisheries Service Offices
Portland, Oregon

An Implementation Team conference call, to discuss an issue raised at the December 2, 1997 Technical Management Team meeting, was held on Thursday, December 4, 1997. The conference call facilitator was Brian Brown of NMFS; other call participants are listed in Enclosure A. The following is a distillation – not a verbatim transcript – of items discussed and decisions made during the conference call.

The issue raised by the TMT was framed as follows at the December 2 meeting:

"Issue: SOR 97-33/34 -- meeting instantaneous 128.5 Kcfs flow requirements below Bonneville Dam.

Salmon managers submitted the SOR to maintain instantaneous flows below Bonneville dam at 128.5 Kcfs to protect incubation of the eggs deposited by an estimated 5,000 spawning (non-listed) fall chinook. The SOR further requested the elimination of power peaking in the Lower Columbia without impacting upriver storage to meet that request.

Operating agency's proposed alternative operation (meeting 128.5 Kcfs on an average flow basis) will result in exposing a large portion of redds for several hours per day during flows of less than 128.5 Kcfs. This will likely result in loss of a portion of the viable larvae. The critical period in terms of lowest flows and a sensitive developmental stage of the larvae appears to be the end of March and the last part of April.

Operating agencies (BPA, USBR, COE) are not willing to meet an instantaneous minimum flow requirement, but are willing to work with the salmon managers to provide the best flow conditions on an average basis which might meet the 128.5 Kcfs objective. Concerns of the agencies include economic concerns/impacts to BPA, lack of planning for a re-established spawning area, risks to upriver storage and other BO requirements. Operating agencies question the need for special operations to protect a local population that appears to have prospered during recent years without any special operations that guaranteed minimum flow levels.

There is TMT agreement that planning for future operations will include comprehensive evaluation of flow protection measures for fall chinook below Bonneville Dam, possibly modeled after Vernita Bar.

Additional requirements/knowledge:

- 1) Substrate water levels to protect incubation as function of project flows
- 2) Technical demonstration of economic impacts on daily time scale.

Requested action from IT:

Should IT recommend the action agencies implement the SOR? If not, can a modified operation be agreeable to all parties? In 1998, what cost and risk to BiOp 1998 objectives are acceptable? What protection level is appropriate for this local population?

TMT chairwoman Cindy Henriksen provided a brief overview of the discussion of System Operational Requests 97-33/34 at the last two Technical Management Team meetings; in general, she said, the (above) written summary does a good job of capturing the two main positions on the Bonneville outflow issue.

When Cindy called earlier this week to let me know this issue was coming our way, Brown began, it wasn't initially clear to me what the link was to the hydro Biological Opinion on Snake River salmon. However, I agreed to facilitate this conference call to encourage discussion among the affected and interested parties. It has subsequently been brought to my attention that there is, in fact, a link to the 1995 BiOp, Brown said. However, it is not a question that is directly addressed by the BiOp, nor is it one that I see as been directly in the purview of the National Marine Fisheries Service, although NMFS does support the SORs as they were laid out, based on the information that we have.

Can you explain to me what the link is between the specific questions in this SOR and the 1995 BiOp? asked Tony Nigro of ODFW. Based on the briefing I've received on this issue, I have the same fundamental question, Nigro said. The question as posed -- in 1998, what cost and risk to BiOp 1998 objectives are acceptable -- is a little confusing to me, said Brown. I don't fully understand how, through this action, we would be trading off 1998 Snake River BiOp measures if we implement this proposed operation at Bonneville. If that question is going to be raised, however, certainly NMFS has an interest in what the answer is going to be, said Brown.

To me, the most obvious linkage to and potential impact on the BiOp is the fact that it could require additional drafting of upstream storage projects, and the probability of refill could be compromised, said Jim Nielsen of WDFW. However, it is stated clearly in the SOR that this is not a desired objective. And I guess that's the source of my confusion, said Nigro -- the SOR specifically refers to operations that are unique to the lower river projects -- John Day, The Dalles and Bonneville. Which brings us back to my original question, said Brown -- this is not a biological opinion issue, unless someone has a different view of how this proposed operation may affect the drafting or probable refill of the storage reservoirs.

We did look at one of the probabilistic studies which simulates the operation of the system through the winter, said BPA's Greg Delwiche -- what it showed was that, under poor water conditions, which might be expected to occur about 15 percent of the time, from the Mid-February to late March period, we would expect flows in the Lower Columbia to fall below 130 Kcfs. Basically, it is only under poor water conditions that the choice would have to be made between maintaining the requested 130 Kcfs at Bonneville and letting some of the flow augmentation water go downriver prior to the spring flow augmentation period, possibly as soon as late January. That is 130 Kcfs on a monthly average, Delwiche said in response to a question.

Are you saying that the monthly average flow would drop below the requested level, or that monthly average flow would drop to a point that the requested flow level would not be met on an instantaneous basis? asked Brown. I said nothing about instantaneous, Delwiche replied -- all I'm saying is that the monthly average would be expected to be less than 130 Kcfs in about 15 percent of the years in the 60-year record. The request was for an instantaneous flow of 130 Kcfs, was it not? asked Brown. That's correct, Delwiche replied -- that's the other issue we have to deal with. And that could become a problem sooner than late January? asked Brown. That's correct, Delwiche replied. In fact, said Nielsen, over the Thanksgiving weekend, flows at Bonneville dropped to a low of about 100 Kcfs, and would have fallen even lower had BPA not imposed a minimum flow limit at that project. Again, that is correct, said Delwiche.

So if the instantaneous part of this request is a problem now, why don't we start there, said Brown. Is it anticipated that Bonneville Dam outflow will fall below the requested level on an instantaneous basis during the next few weeks? The answer to that question is primarily load-driven, but the general answer is yes, Delwiche replied -- particularly if the weather stays mild, I would anticipate that an optimal power operation could take us below 130 Kcfs at night.

Just for your information, the loss of the ability to shape between daytime and nighttime flow is not nearly as big an economic hit as the weekend reduction, because the weekend reduction impacts power operations as far upstream as Grand Coulee, Delwiche said. So what you're saying is that the day/night shaping is not as big an issue, from BPA's standpoint, as the weekday/weekend shaping, said Brown. That's correct, said Delwiche. We've estimated that running 100 Kcfs at night vs. running 130 Kcfs at night has a daily impact of about \$10,000 to \$15,000, while running 130 Kcfs, rather than 100 Kcfs, as a minimum weekend flow, has roughly a \$1 million per weekend impact. In response to a question, Delwiche said that assumes Bonneville inflows in the range of 130 Kcfs to 160 Kcfs -- once flows begin to exceed 160 Kcfs, the impacts began to go away, because the system really doesn't have the ability to back off much below 130 Kcfs at night.

Could we implement this SOR with the understanding that, at certain points in the future, we will look at where we are with respect to the kind of water year we anticipate, and the potential impact to BiOp operations in the spring, and revisit this question at that time? asked Nigro. The question I need to be able to answer is, what are the biological impacts of going below 130 Kcfs, and what are the economic impacts if we operate with a 130 Kcfs minimum? Delwiche said. It would be very nice to know how many redds would be impacted at each threshold flow level -- to know whether 50 percent of the redds would be exposed if we fall from 130 Kcfs to 100 Kcfs, or whether only 10 percent of the redds would be affected by those flow levels. I don't know whether or not it would be possible to generate that kind of information, Delwiche said, but it would certainly help me to respond to questions about what biological benefits would accrue if we agree to this SOR.

Fred Olney said the Fish and Wildlife Service is continuing to analyze the data it has in hand -- we had a crew out there on Tuesday, he said, and would like to do more surveys, but staff resources are limited. Nielsen said WDFW and the Fish and Wildlife Service have been discussing the possibility of following redds through development and emergence, but that those discussions are preliminary at this time.

The group discussed the rationale behind the 128.5 Kcfs flow request; Don Anglin explained

that 128.5 Kcfs at Bonneville is the minimum necessary to ensure six inches of water coverage over the shallowest redds. Basically, it sounds as though we will be running a risk of mortality if we allow flows to drop below 128.5 Kcfs, Nigro said. We are in the business of controlling mortality to the greatest extent possible, and I would prefer to manage this particular resource such that the risk is zero. I have a question, said Henriksen -- when you say the shallowest redds are covered by six inches of water at 128.5 Kcfs outflow through Bonneville, does that take into account tidal effects? Anglin replied that it is extremely difficult and complicated to factor in tidal effects at that point in the system. Channel surface elevation in that river reach can fluctuate up to 0.4 feet, depending on the magnitude of the tide.

One thing to bear in mind is the fact that there aren't many mainstem spawning areas left in the system, said Michelle DeHart of the Fish Passage Center. In answer to Greg Delwiche's question about how many redds would be dewatered if flows from Bonneville fall to 120 Kcfs, I would say that there is a chance that all of them could be dewatered. Given the fact that most of the mainstem spawning habitat has already been destroyed, I am a little concerned about the direction this conversation is headed. From Oregon's prospective, said Nigro, the loss of even one redd would be significant.

So what I'm hearing so far is that the information we currently have in hand suggests that 128.5 Kcfs will maintain six inches of coverage over the shallowest redds, and anything below 98 Kcfs, plus or minus 5 Kcfs, will dewater everything, said Brown. It also sounds as though BPA has looked at the difference between 130 Kcfs and 100 Kcfs on a day/night basis and on a weekday/weekend basis, assuming an inflow of 160 Kcfs or less to Bonneville, and has concluded that the cost will be about \$15,000 per night if they are constrained to a minimum of 130 Kcfs, and about \$1 million per weekend if they are so constrained. I think that at least gives us some sideboards for this conversation, he said. BPA's Dan Daley said that, while Brown's summary of the financial picture is correct, BPA still has a number of outstanding biological questions about this SOR -- for example, what is the wetted perimeter, and what are interstitial gravel flows like in this habitat area?

I've also heard the concerns of the other salmon managers about the loss of mainstem spawning habitat, and the fact that the loss of even a single redd would be significant, Brown said. While I share those concerns, it still seems to me that this is not a NMFS decision to make under the Biological Opinion. I still do not see this as a Biological Opinion issue, unless we reach a point that the provision of the additional water to meet this requested flow level may affect spring and summer operations in 1998. That leaves this as a decision for BPA and/or the Corps to make, although it sounds as though, if we can develop some additional biological information to inform that decision, that would be helpful.

In response to Dan's question, we essentially know nothing about the interstitial gravel flow at this site, said Nielsen; that is one reason for requesting this particular flow level -- we know it will keep all of the redds underwater. I think we can agree on the assumption that these are viable redds, and that keeping water over them is something we would like to try to do, said Brown. That being the case, let's talk about whether or not we can provide some additional information to inform the operational decision.

After some minutes of further discussion, Nigro reiterated his suggestion that the SOR be implemented as requested; concurrently, we can do as Brian suggests and see what we can do to

collect better information, and revisit the requested flow levels at some point in the future, he said. I guess that is a question for BPA and the Corps, said Brown -- are they willing to agree to implement this operation, pending the development of additional information to inform them about what will be required to maintain the redds through emergence?

A couple of comments, said Delwiche -- first, if there are 5,000 redds out there, it would be very helpful to know, if flows drop from 130 Kcfs to 100 Kcfs, whether we would be dewatering one of those redds, or 2,500 of those redds. Second, would it be feasible to go out to the site at low tide and ratchet the Bonneville outflow downward in increments, to try to answer this question?

The question then becomes, how would you use that information? asked DeHart. What if 100 redds are dewatered at flows of 120 Kcfs? What if it's only 50 redds? How will the information affect your decision? Is there some cutoff point in Bonneville's mind, which says it is acceptable to lose X number of redds? We know that at 117 Kcfs, three redds in one area were dewatered, she said, because someone was there and documented it. But I still don't know how Bonneville would use that information in its decision-making, she said. I agree, said Nigro -- if we are going to fine-tune flows, I would prefer that we seek the lowest flow at which no redds would be dewatered, rather than trying to define a threshold of acceptable redd loss. Perhaps we could achieve the same objective at something less than 128.5 Kcfs.

In response to another question, Anglin said that, if you assume that 100 percent of the wetted area is covered at 128.5 Kcfs, at 120 Kcfs main channel discharge, 73 percent of the total area is covered; at 110 Kcfs, 40 percent of the total area is covered; at 100 Kcfs, seven percent of the total area is discovered. That is wetted perimeter, not redds, he added. Bear in mind that this is only a rough calculation of what happens at those flow levels -- basically, if flows drop from 128.5 Kcfs to 100 Kcfs, you'll lose pretty much everything. I should add that, in my opinion, the 128.5 Kcfs flow target is probably a conservative estimate of what is needed to insure the safety of all of the redds -- if anything, further study would probably tell us that the flow level needs to be higher.

So I guess where we are, said Delwiche, is that BPA's position is that we will implement this SOR on a best-effort basis. Can we agree to hold regular discussions on this issue at the TMT level, so that, if BPA concludes that their economic pain has become too great, we can discuss some alternatives? asked Nigro. And perhaps in the interim, the Fish and Wildlife Service and WDFW can do what they can to develop additional information about how the redds are distributed. My agency is certainly willing to work with the Fish and Wildlife Service to see what additional information we can develop, Nielsen said. In response to your first question, there is another TMT meeting scheduled for January 15; if the situation comes to a head before that, I assume that BPA will contact the other parties involved. If we foresee a problem between now and January 15, we will call Cindy to set up a TMT conference call, Delwiche said.

If I could summarize, said Liz Hamilton, the salmon managers have requested a minimum flow level from Bonneville dam, and NMFS supports that request. BPA and the Corps are the agencies that will make the decision about whether or not to implement that request; they have agreed to implement it on a best-effort basis. That best-effort basis will include notification of the salmon managers of any change in the status of this operation. If they do decide to reduce Bonneville outflows and dewater the redds, will they provide a written explanation of their reasons for doing so, and also, will there be some form of mitigation for the lost production?

I think it is premature to discuss the question of mitigation, because we haven't encountered that situation yet, said Delwiche, and because we have agreed to convene a conference call prior to implementing such a decision. However, I would like to know whether mitigation is something the salmon managers would be looking for if all this production is destroyed, said Hamilton. That is an issue I would prefer to haggle over if and when it becomes reality, said Nielsen. That sounds like a pretty good conclusion to today's phone call, said Nigro.

In response to a question from Bill Rudolph, Nielsen said the fish spawning below Bonneville are upriver brights, presumably progeny of fish that were reared in Bonneville pool. He added that his agency is in the process of doing genetic stock identification work on these fish to clarify exactly what their background is. One thing to bear in mind is that they are a naturally-spawning population; another thing to note is the fact that we have examined about 900 carcasses to date, and none of those fish had hatchery marks, brands or tags. That is at least a preliminary indication that they are likely the result of natural production, Nielsen said. There is also evidence that chum salmon utilize that area for spawning, said Fred Olney -- we have recovered at least one chum salmon carcass, and this area is adjacent to Hamilton and Hardy Creeks, which contain two of the three chum salmon spawning populations in the Lower Columbia River. My understanding is that there is also some coho salmon spawning near Hardy Creek, said Gary Fredricks of NMFS.

With that, the conference call was adjourned. Meeting notes prepared by Jeff Kuechle, BPA contractor.